2 Sheets—Sheet 1.

W. WESTLAKE.

CAR-LAMP.

No. 188,271. Patented March 13, 1877.

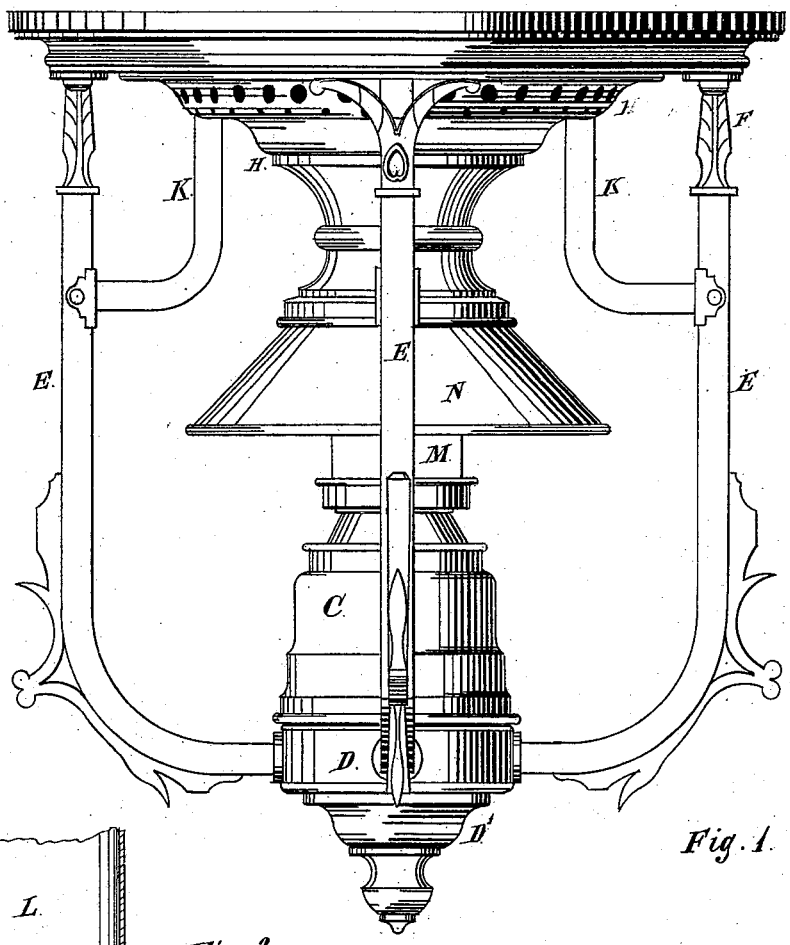


Fig. 1.

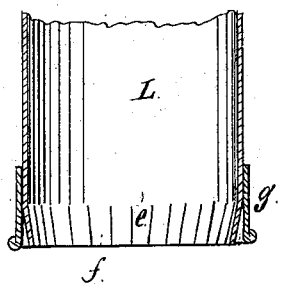
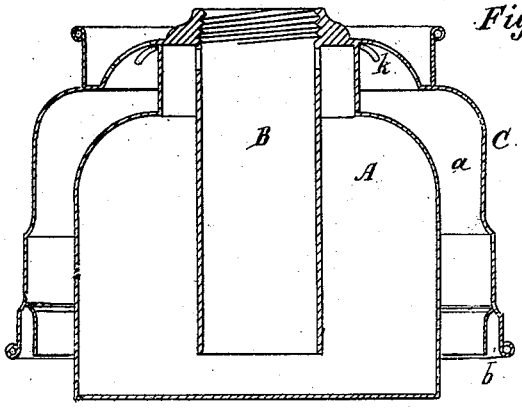


Fig. 3.

Fig. 2.



Witnesses:
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A. W. Bond.

Inventor:
Wm Westlake

2 Sheets—Sheet 2.

W. WESTLAKE.

CAR-LAMP.

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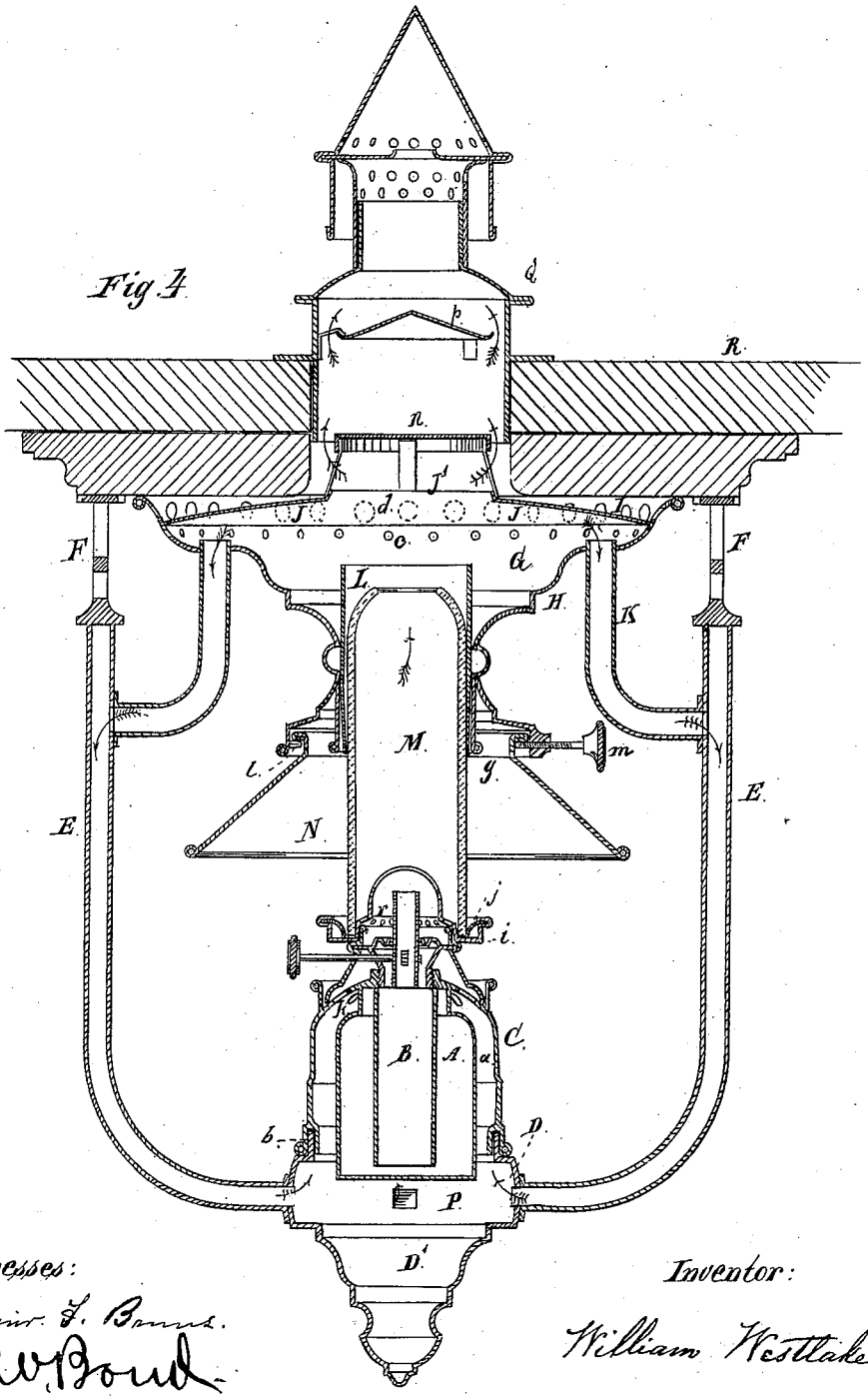
Fig. 4



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Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM WESTLAKE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CAR-LAMPS.

Specification forming part of Letters Patent No. **188,271**, dated March 13, 1877; application filed February 6, 1877.

To all whom it may concern:

Be it known that I, WILLIAM WESTLAKE, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Car-Lamps, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation; Fig. 2, a vertical section of the oil-pot and jacket; Fig. 3, a detail, showing the lower end of the chimney-holder; Fig. 4, a vertical section.

It has been customary in car-lamps of this class to use a chimney and globe outside thereof, for the purpose of protecting the flame from currents produced either by the movement of the car or otherwise. With such globes it is impossible to use a shade or reflector properly located.

The chief objects of my invention are to construct a car-lamp without a globe, in such a manner that the flame shall be protected from currents, and so that a shade or reflector can be used therewith.

In the drawings, which represent a lamp adapted to be secured to the ceiling of a car, A represents the oil-pot; B, a wick-holder, extending nearly to the bottom of A; C, a jacket, the top of which is secured to the top of the oil-pot. *a* is a space between the oil-pot and jacket for the passage of air. *k* are holes in the top of C, through which air passes to support the flame. C is forked at the bottom, as shown at *b*. D is a band to receive the oil-pot, over which band the fork *b* passes. D′ is a drip-cup secured to the band D. Within this band D is an air-chamber, P. E are tubes, the lower ends of which are secured to the band D, and open into the chamber P. As shown, these tubes are closed at their upper ends, and are connected with the roof of the car by the connecting-pieces F. G is an air-chamber below the ceiling of the car, and H forms the under side of such chamber. I is another chamber above G, and separated therefrom by the diaphragm J, which has a central opening, J′, for the passage of smoke. *c* are small holes or perforations in H, opening into the chamber G, for the purpose of supplying air to such chamber. *d* are large holes opening into the chamber I above the diaphragm J. K are air-tubes connecting the chamber G with the air-tubes E. L is a metal chimney-holder, secured within H, which is extended downward, as represented in the drawings. The lower end of L is provided with a number of slits, *e*, as shown in Fig. 3, thus forming at the bottom of L a number of springs or tongues, *f*, which come in close contact with the chimney. *g* is a metallic band, secured to H outside of L, for the purpose of preventing the springs or tongues *f* from being bent outward too far. M is the chimney, fitting closely within the tongues *f*. The lower end rests upon a gallery, *i*, and is made, practically, air-tight by means of a rubber packing-ring, *j*. Outside of the cone are a number of small perforations, *r*, through which a limited portion of air passes to the outside of the flame. N is a shade or reflector. As shown, it is supported in the lower end of an extension of the part H by means of a lug, *l*, upon one side, and a thumb-screw, *m*. Q is the ordinary smoke-jack upon the top of the car, in which, as shown, are two wind-breakers, *n p*. R is the roof of the car.

In use, air which supplies the flame is drawn from the chamber G, through K and E, into the chamber P below the oil-pot, from which it passes between the oil-pot and the jacket, and through the holes *k* to the flame beneath the cone, a small portion, also, passing through the holes *r* to the outside of the flame. The chimney is, practically, air-tight at the bottom, so that currents of air cannot enter to affect the flame. It also fits quite tightly within the fingers or tongues *f*. To light the lamp the chimney can be raised, and the pressure of the tongues *f* upon it will hold it up.

The construction of the oil-pot and jacket is such that the oil-pot can be removed readily from its support for the purpose of filling and cleaning, which is a very important feature in lamps of this class.

The form of the fork *b* is such that any drip or overflow from the wick-tube will pass down into the drip-cup D′, and cannot pass to the outside thereof.

The motion of the car or air-currents will not appreciably affect or disturb the air in the chamber G, the holes *c* therein being quite small; but the effects of such motion and currents will be mainly felt in the large cham-

ber I, because the openings *d* therein are large, permitting a more free passage of the air into such chamber I than into the chamber G. The course which the air takes in passing from the chamber G to the flame is indicated by arrows. The course which the smoke takes in passing from the chimney is also indicated by arrows. The arrangement of the wind-breakers and the diaphragm J is such that currents from above, if any, will be expended mainly in the chamber I, and will not appreciably affect the air in the chamber G.

By this construction I provide an air-chamber, G, from which air is to be drawn to the flame, in which the air will be always comparatively quiet; I provide a removable oil-pot; I provide a device which prevents rattling of the chimney, and holds it steadily in place; and I also provide a suitable reflector, arranged at the proper point to throw the light down into the car.

I have represented four tubes for the passage of air from the chamber G to the flame, but do not limit myself to this number. Any less number may be used. The lamp can very easily be modified so as to be used for a side lamp, in which case but a single tube of suitable size will be necessary.

Instead of providing the oil-pot with the jacket C, in order to form a passage for the air, the oil-pot might be placed directly upon the band D, and tubes might be located in the oil-pot, their lower ends opening into the chamber P, and their upper ends opening beneath the cone, through which tubes air would pass to the flame.

It is important that the chimney be practically air-tight at the bottom, and that air-currents shall not be permitted to pass up its outside into the chamber G. The air-chamber I and large holes *d* provide an outlet for air-currents without disturbing, materially, the air in the chamber G.

It is not necessary that the exact arrangement shown should be adopted. The top of the chamber G may be located farther from the roof of the car than shown, leaving an open space above it for the passage of air out through the roof of the car, and the form of the chamber may be changed.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a car-lamp, a removable lamp-pot, in combination with a slip-chimney, M, air-chamber G, and one or more air-tubes for supplying air from the chamber G to the flame, substantially as specified.

2. The chimney-guide L, provided with tongues or fingers *f*, in combination with an air-chamber, G, and one or more air-tubes for supplying air from the chamber to the flame, substantially as and for the purposes specified.

3. The chimney-guide L, provided with fingers or tongues *f*, in combination with the band *g*, substantially as and for the purpose described.

4. The oil-pot, or jacket thereof, provided with a fork, *b*, to engage with the band D, and so formed on the outside that the overflow cannot escape, but will be directed into the drip-cup D′, substantially as specified.

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